Automated Packaging Development With Quick Closure

Presented by

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National Transportation Program Packaging Systems Concepts

Develop and evaluate packaging concepts that utilize promising new technologies for radioactive material transportation

Strive for areas where order of magnitude improvements can be made over state of art

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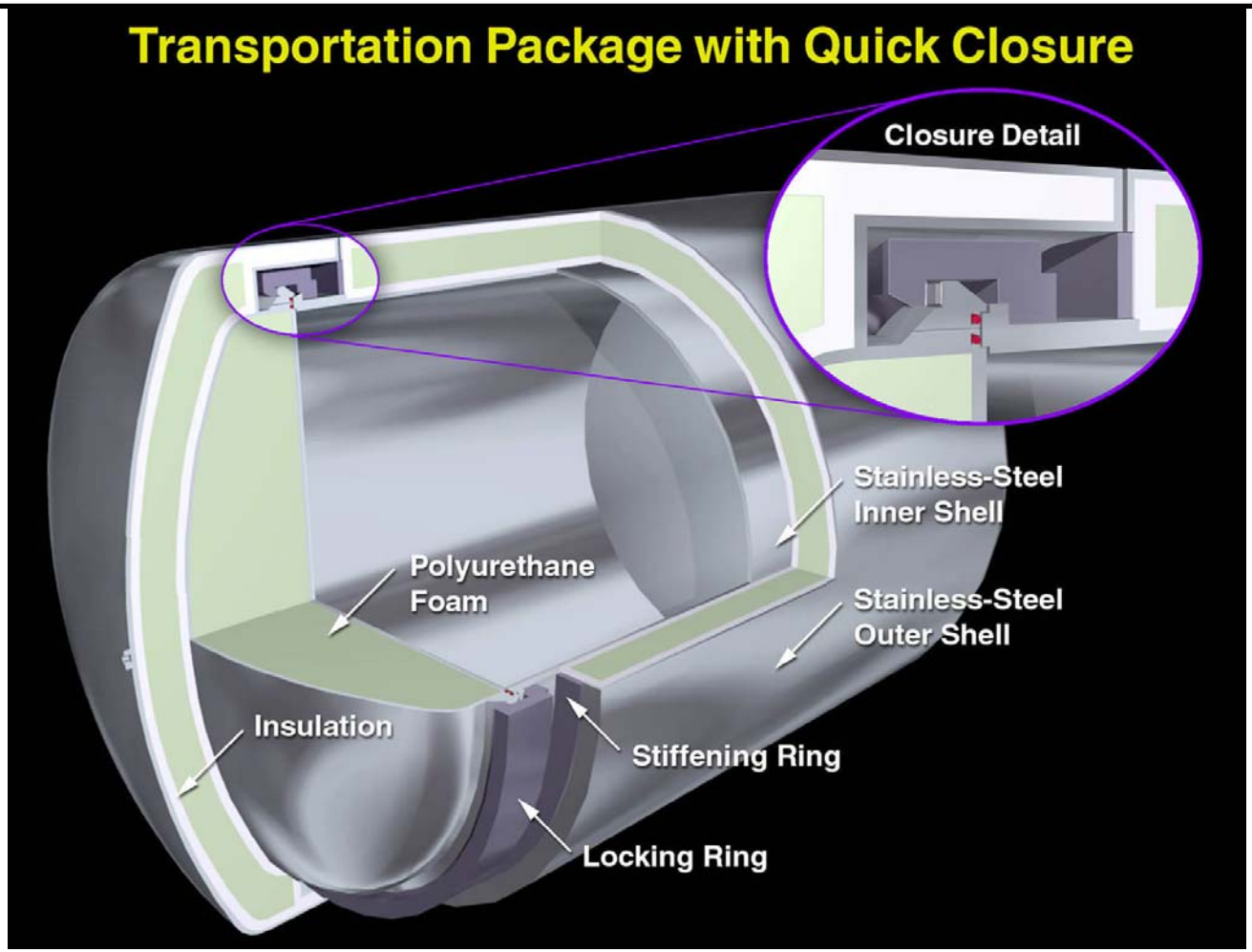
Quick Closure Development

- **Guiding Principles**
  - Operations and maintenance must be optimized
  - Manufacturability is key
  - Regulatory Compliance and safety is mandatory

- **Goals for automated and simplified operations**
  - Less personnel exposure (ALARA)
  - More efficient operations (faster turnaround and fewer packages needed)
  - Lower procurement and operational costs

Automated Package Development



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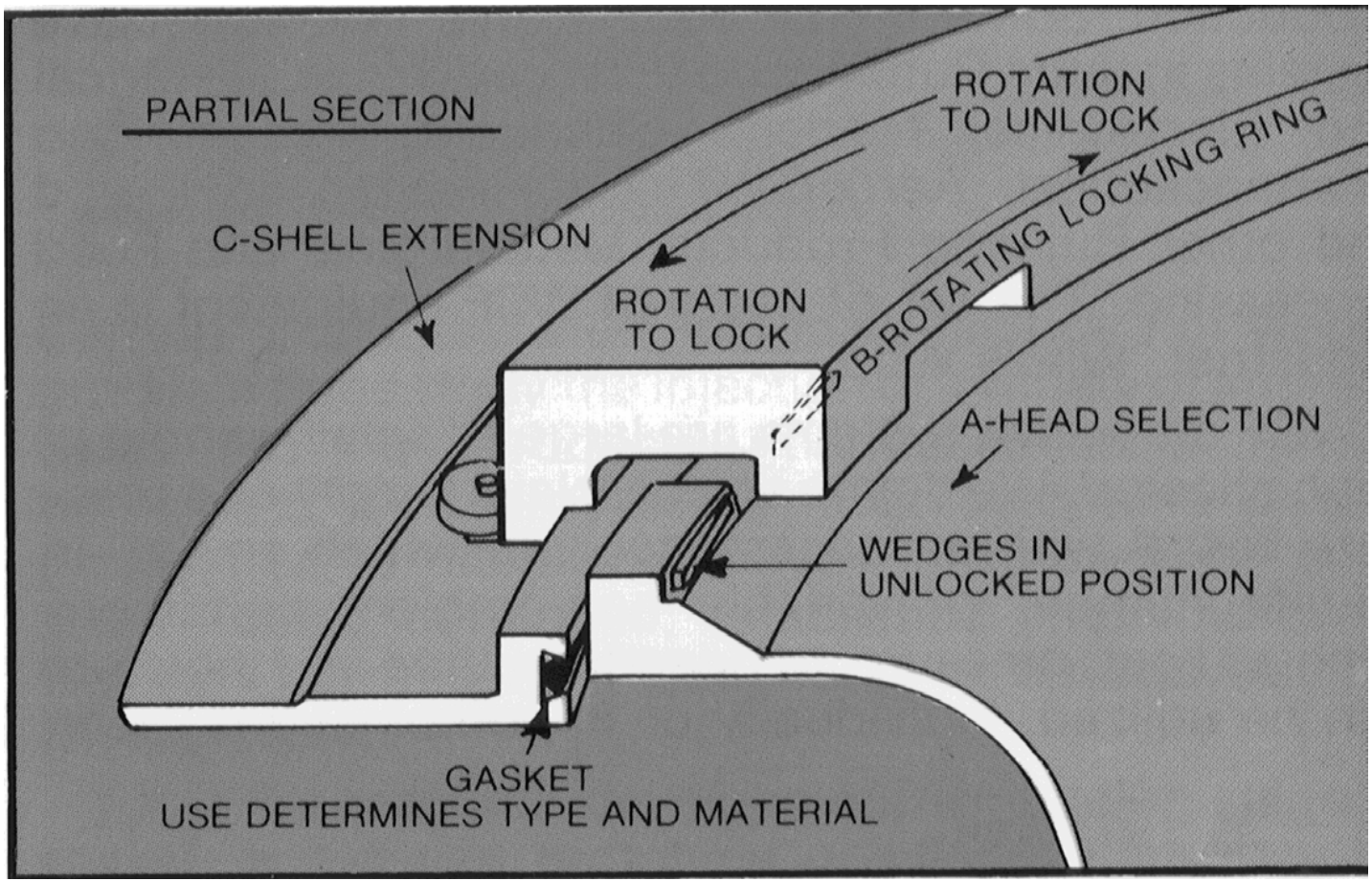
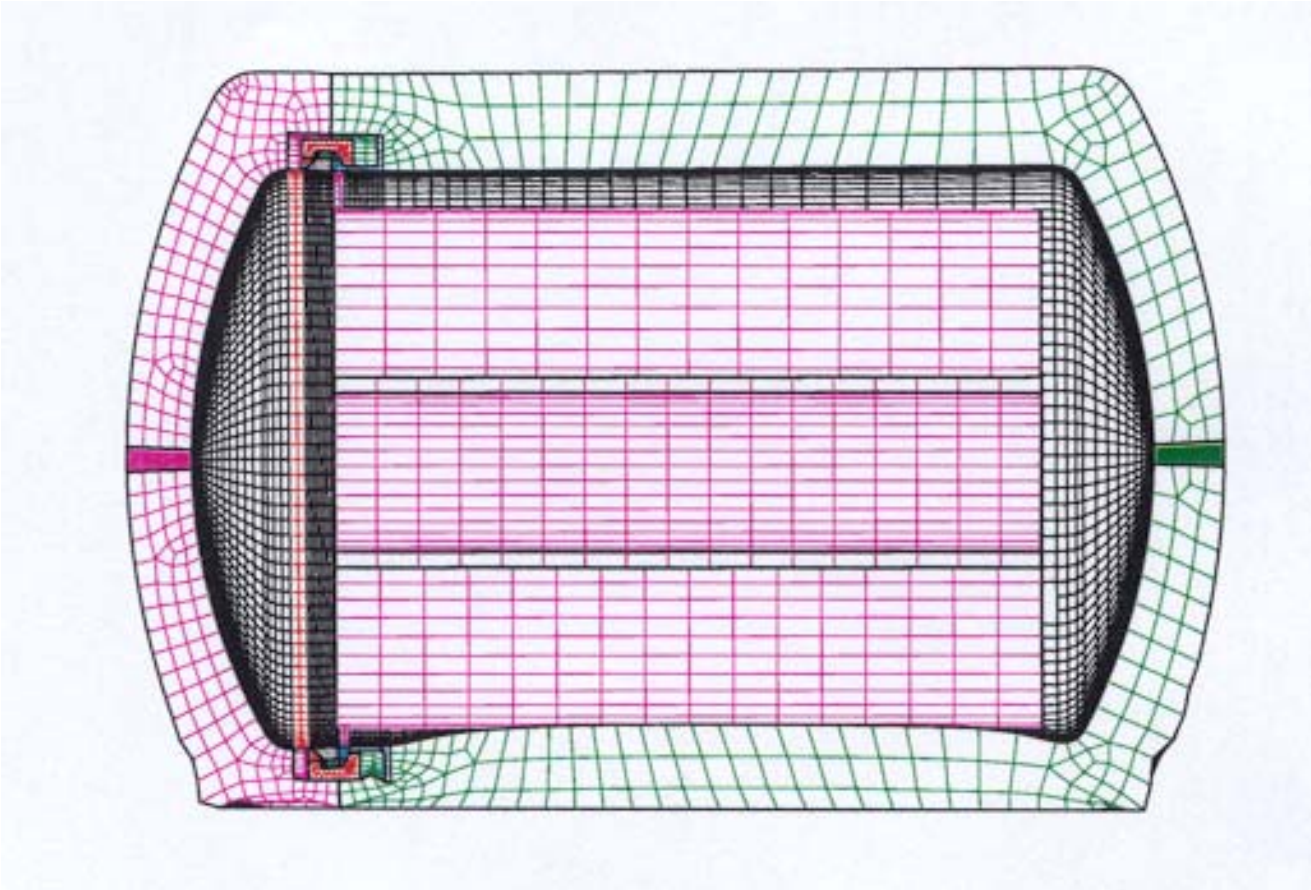
Experimental Prototype

- Closure and door operations performed in less than one minute
- As received prototype achieved
  - 3.5 X 10-9 cc/s He (initial)
  - 1.2 X 10-6 cc/s He (steady state permeation of O rings)

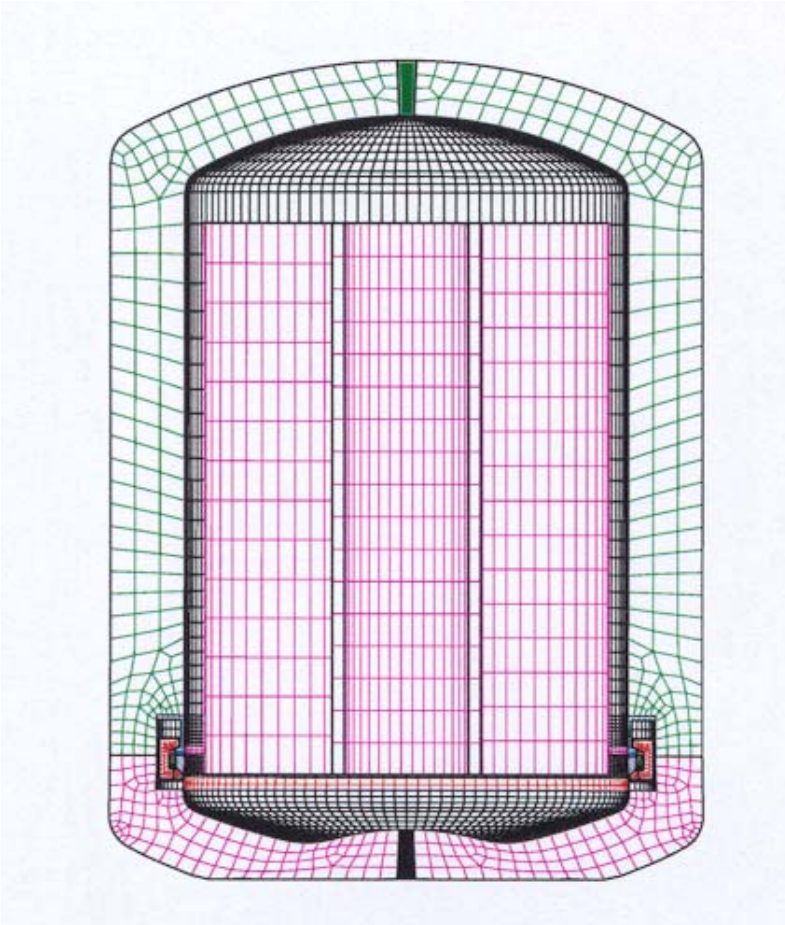
Closure Details



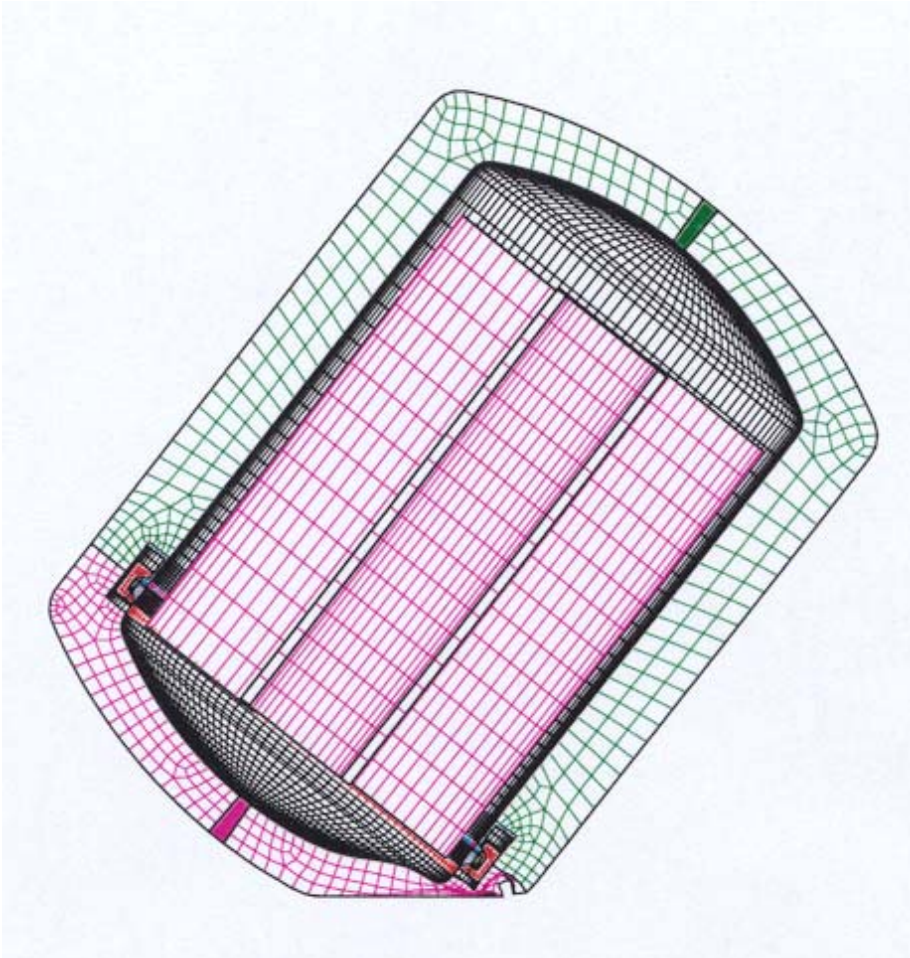
Side Impact Analysis



End Impact Analysis



CG/Corner Impact Analysis



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Army Onsite Container

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Enhanced Onsite Container

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Conclusions

- **Significant programmatic savings may be achieved if new generation of packagings are automated with attention paid to operations and manufacturability**